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TIMBER AND MINERALS OF THE DEEP RIVER COUNTRY, NORTH CAROLINA.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

A copy of Major Laidley's report on the timber and mineral resources of the Deep River country, in North Carolina.

June 10, 1856.—Referred to the Committee on Military Affairs, and ordered to be printed.

War Department,
Washington, June 2, 1856.

Sir: In compliance with the resolution of the House of Representatives of the 29th ult., I have the honor to transmit herewith "a copy of the report of Brevet Major T. T. S. Laidley, commandant of the North Carolina arsenal, on the timber, and iron, and mineral resources of the Deep River country, in North Carolina."

Very respectfully, your obedient servant,

JEFF'N DAVIS,
Secretary of War.

Hon. N. P. Banks, Jr.,
Speaker of the House of Representatives.

North Carolina Arsenal,
April 29, 1856.

Colonel: Following out your suggestion made to me in December last, to visit the country of the Deep river, with a view of examining its capability of furnishing timber for ordnance constructions, I proceeded on the 15th instant to visit several of the best timbered localities that I could hear of in the counties of Moore, Chatham, and Randolph. This region of country is rich in mineral wealth, and its growing importance, and the proposition of establishing a national foundery on Deep river, determined me to embrace in the objects

of my visit the examination of the coal and iron, and whatever else might be useful for ordnance purposes.

Taking the plank road, the first point reached on Deep river is the gulf, distant from this place forty-nine miles. Its elevation above Fayetteville is 150 feet. The coal and iron both crop out here: the former has been used from this mine for a longer time than from any other place in the coal-fields, and was known, and reported upon, at the time of the Revolution.

No machinery has ever been put up for working the mine, as wood is so abundant that the demand for coal is confined to the different blacksmiths' shops in the neighborhood.

At Egypt, five miles east of the gulf, preparations for mining the coal have been made on a large scale. On a broad plain, more than 500 yards from the river, a shaft has been sunk, cutting the coal at 425 feet from the surface of the ground. Permanent buildings have been erected, and a steam-engine of forty horse-power has been put up to raise the coal, and a similar one is soon to be used to keep the mine free from water. At this shaft the top bench of coal is four feet in thickness, underlaid by a vein of slate eighteen inches thick, which separates it from the lower bench, which is twenty-two inches thick. There is a vein of coal seven inches thick under six inches of slate, but this is not at present worked. The entire thickness of coal is, therefore, six feet four inches. I descended the shaft and examined the coal in place. When first mined it is clean and lustrous, scarcely soiling the fingers, and very free from earthy matter. Its qualities have been summed up by Professor Emmons, who has examined it critically. He says of it, "it is scarcely equalled for fineness and excellency in this country; it is highly combustible, easily ignited, and burns with a bright flame; it is rich in bitumen, and contains but very little sulphur; it furnishes an excellent coke, and is well adapted to the work of reducing the metals, inasmuch as its flame is free and durable; it is admirably adapted for steamings; and for forge use it is not surpassed by any coal in market. For the manufacture of gas no coal is superior to it."

At the Egypt mine I witnessed its fine qualities for driving the engine. It is used exclusively for this purpose, though wood is abundant, close at hand, and worth only the cutting and hauling.

In sinking this shaft four strata or iron ore were penetrated, varying in thickness from ten inches to three feet, amounting in all to six feet. Fire-clays in abundance were also met with.

I visited also the coal mines at Farmsville, about five miles east of Egypt. This is a surface mine, and *has* been worked, though it is not at present. Permanent buildings have been erected, and a steam-engine put up for raising the coal and pumping out the water from the mine: rail track and cars are provided, so that they can go to work on an extensive scale as soon as transportation is provided to take the coal to market.

Taylor's mine, two miles west of Egypt, has been worked, but no buildings or machinery have been erected. I found specimens of iron ore at this place also.

These are all the mines that I visited. There are others that are

opened and worked to some extent, though the principal ones are those I visited. At Hornesville, Dye's, Foshee, Wilcox, Chalmers, Sinclair, and others, coal has been taken out, covering a space of about thirty miles in length. The quality of the coal at these localities is much the same, except at Wilcox's, and one or two other places, where it is semi-anthracite.

Iron ore of the coal formation is found in quantities all along the out cropping of the coal. A different ore, the pure oxide, is found in a large vein, about six miles north of the gulf, where it has been traced for several miles, east and west. It has never been worked. About five miles further north lies the Iron Mountain or Ore Hill, several hundred feet high, and about two miles long, composed almost entirely of a rich iron ore—the red hematite. About the time of the Revolution this ore was worked, and the remains of the old furnace, the slag, &c., still exist where the smelting was carried on. Some specimens of the specular iron ore have been found in this vicinity.

In the immediate neighborhood there is an abundance of wood to make charcoal for the manufacture of iron, and the nearest coal mines are only ten or eleven miles distant.

The valley of the Deep river is generally cleared of its timber, and is under cultivation: the hills and the valleys of many of the small creeks have still their primeval growth upon them, and in many places there are oaks, poplars, ash, hickories, and gums of fine size, and well adapted for the construction of gun-carriages. On Indian creek, about three miles above the gulf, I found some fine trees—none of the largest size.

On McLennon's creek, a tributary of Deep river, about eight miles above Carbonton, there is some very large timber, capable of furnishing pieces of the greatest required dimensions for the heavy seacoast carriages.

I also found on Crawley's creek, a branch of McLennon's, some fine white-oak timber; trees from two to three feet in diameter. The large trees are found, in all cases, in the low, wet valleys, which have been fertilized by frequent overflows; the timber cannot be so good as that which grows in higher and drier places.

On Crawley's creek there is fine sandstone for building purposes, and also grit, suitable for grindstones, of various degrees of fineness.

In this vicinity there is also soapstone in abundance, which can be had in large blocks.

There are mill-seats on all of the many creeks, many of which are already improved, and saw-mills are to be met with every few miles.

From McLennon's creek I passed on to Randolph county, in the vicinity of Asheboro', and examined the timber on Uharie river, which empties into the Pedee. The valley of this river being generally fertile and well adapted for agriculture, it is mostly cleared, and under cultivation. There are some small tracts, however, where the timber has been permitted to stand, and there the growth is of large size. The same remark is applicable to Sandy creek, which flows into Deep river, just below Franklinsville. I went up this creek twelve miles before finding a tract of any size that was uncleared. Timber of the largest dimensions can be furnished from this

county, but it will be by taking a tree here, and one there, wherever they can be found. I found on Mill creek, about three miles from Franklinsville, a few large trees from three to three and a half feet in diameter.

There are no extensive tracts, that I could hear of, where there was an abundance of timber of large and thrifty growth, but there is the greatest abundance of white oaks of moderate size, from eighteen inches to two feet in diameter, suitable for wagons and field-carriages. The best, for this purpose, that I have seen, is in the vicinity of Franklinsville. The country is hilly, the soil a stiff red clay, with many quartz-rocks scattered over it; the timber is firmer and tougher than that which grows on lighter soils, or in the Sandy country. In this opinion I am confirmed by the experience of some of the wagon and carriage makers, whose opinions I have heard expressed.

About three miles from Franklinsville, I visited a shaft, sunk about sixty feet, passing through a vein of specular iron ore the greater part of that distance. The ore has never been worked. There is also magnetic ore found in the vicinity.

In this part of the country I find that white oak is never used for the naves or fellies of wagons. For the former, black gum, red elm or post-oak, is invariably used; and for the latter, the willow-oak. They all possess the advantage over the white oak of not splitting so readily.

The willow-oak is a coarse-grained wood, growing in moist places, tough and hard, and possessing great strength; it is always used for plough-beams and such like purposes, where strength and stiffness are required.

White-oak timber is not very valuable, being used mostly for making spirits of turpentine barrels. Near Asheboro' I found it was used for laying the plank road, though the pine is still plenty: the oak is heavier to haul, but lasts longer.

The carriage and wagon makers pay from twelve to fifteen dollars per thousand for their white oak, delivered at their shops, sawed through and through the log, into boards from one and a half to two and a half inches in thickness. The transportation from Asheboro' to this place is estimated to cost fourteen dollars per thousand feet. The road is planked the entire distance, eighty miles.

There is a locality on the east side of the Cape Fear, about sixty or seventy miles distant, on the New Hope river, which is said to abound in white-oak timber of large size. The valley of this river is represented as low and wet, and has not, in consequence, been cleared of its forest growth for agricultural purposes. It was from the headwaters of this stream that a contractor, four years ago, endeavored to furnish timber for this arsenal, but was compelled to abandon the contract in consequence of the great expense of transportation, being obliged to haul his timber some sixty or seventy miles through the sand.

Since that time the navigation of the Cape Fear has been improved, and water transportation for forty miles can now be had in place of wagoning. After further improvements in the river, this timber may become available for ordnance purposes at this arsenal.

There is timber on Crane's creek, thirty-three miles from here, but not of the large kind, and its quality is granted to be inferior to that of Franklinsville.

White-oak timber can also be had from the valley of the Cape Fear, within fifteen miles of this place, and further up; but the samples that I have seen are inferior in quality, being light and brash.

I have made some trials of the strength of the white oak of this section of country, and give below the results. The timber was cut in 1852, and was from the counties of Randolph and Orange.

The pieces were two feet long between the bearing points; their cross-section was an inch and a half square. The bearing points were knife-edges, and the breaking weights were applied to a knife-edge resting equidistant from points of support. Weights were added till the piece gave way.

No.	WHERE FROM.	BREAKING WEIGHTS.	REMARKS.
1	Franklinsville	920 lbs. bent .75 in.	Grain, diagonal.
2	Same tree, Franklinsville	952 " " .75 "	" perpendicular.
3	---do.	952 " " .75 "	" parallel.
4	---do.	920 " " .75 "	" oblique.
5	Same tree, ---do.	906 " " .75 "	" "
6	---do.	873½ " " .75 "	" diagonal.
7	Orange county, (near Chapel hill,)	1,085 " " 1.50 "	" oblique, tough.
8	Same tree, Orange co., (near Chapel hill,)	1,184 " " 1.50 "	" perpen'r tough.
9	---do.---do.	1,284 " " 1.50 "	" parallel, tough.
10	---do.---do.	754 " " .5 "	" diagonal.
11	---do.---do.	794 " " .6 "	" "
12	---do.---do.	973 " " .75 "	" parallel.

Experiments, similar to the above, were made at the Washington arsenal several years since, to test the effect of Dr. Earle's process, but I have not been able to procure any record of them to make a comparison between this and the oak of the middle States.

I enclose, herewith, a map of the coal region, and a sketch of the places visited.

Very respectfully, I am, colonel, your obedient servant,

T. T. S. LAIDLEY,
Brevet Major.

Col. H. K. CRAIG,
Ordnance Office, Washington, D. C.